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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/054,891	01/25/2002	Naotaka Wachi	Q68255	5436

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EXAMINER

SCHILLING, RICHARD L

ART UNIT	PAPER NUMBER
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1752

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DATE MAILED: 12/04/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/054891

Applicant(s)

Wachi et al

Examiner

RL Schilling

Group Art Unit

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—The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Status

- ☐ Responsive to communication(s) filed on _____.
- ☐ This action is FINAL.
- ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 1 1; 453 O.G. 213.

Disposition of Claims

- ☒ Claim(s) 1-46 is/are pending in the application.
- Of the above claim(s) _____ is/are withdrawn from consideration.
- ☐ Claim(s) _____ is/are allowed.
- ☒ Claim(s) 1-6, 17-46 is/are rejected.
- ☒ Claim(s) 7-16 is/are objected to.
- ☐ Claim(s) _____ are subject to restriction or election requirement.

Application Papers

- ☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
- ☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
- ☒ The drawing(s) filed on 5-23-02 are approved is/are objected to by the Examiner.
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

- ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- ☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been received.
- ☐ received in Application No. (Series Code/Serial Number) _____.
- ☐ received in this national stage application from the International Bureau (PCT Rule 1 7.2(a)).

*Certified copies not received: _____

Attachment(s)

- ☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 3
- ☐ Interview Summary, PTO-413
- ☒ Notice of Reference(s) Cited, PTO-892
- ☐ Notice of Informal Patent Application, PTO-152
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Other _____

Office Action Summary

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1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) The invention was described in (1) an application for patent, published under Section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention

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was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-6 and 17-46 are rejected under 35

U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Imamura. Imamura (see particularly column 7, lines 27-53; column 9, line 49 - column 10, line 30; Example 1) discloses thermal transfer sheets for making color proofs with light to heat conversion layers made as thin as possible to enhance recording sensitivity. The amount of absorbing material disclosed, 1/20-2/1, is the same as disclosed in applicants' specification. The thickness of the light to heat absorbing materials is .03-.8 microns, preferably .05-.3 microns; and the absorption of the light to heat materials is preferably .1-1.3. At the preferred maximum absorption in Imamura et al. the ratio of optical density to layer thickness is .57 or more as required by the instant claims using the disclosed preferred thicknesses of the light absorbing layers in Imamura. The ratio of optical density to layer thickness in Example 1 of Imamura is greater than .57. Polyvinyl butyral is used as the binder in the transfer layers in Example 1 as is used in applicants' working Examples. Therefore, Imamura discloses transfer layers with water contact angles as required by instant claims 40 and 41. Pigment concentration in the transfer layer would inherently provide optical density to thickness ratios greater than 1.5 as

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required in claim 37. Alternatively, it would be obvious to one skilled in the art to use colorant concentrations in the transfer layers of Imamura to increase transfer image density. Also, it would at least be obvious to one skilled in the art to use thin light to heat conversion layers and increased light absorption materials in the light to heat conversion layers to increase recording sensitivity in the transfer materials of Imamura.

2. Claims 1-6 and 17-46 are rejected under 35 U.S.C. 102(a) and (e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Takahashi or Nakamura et al. Takahashi et al. (see particularly column 9, lines 1-63; column 10, line 19 - column 11, line 50; Example 1) and Nakamura et al. (see particularly column 7, lines 9-35; column 9, line 57 - column 10, line 65; column 13, lines 7-41; Examples 1 and 2) disclose image transfer elements for making color proofs with light to heat conversion layers made as thin as possible to enhance recording sensitivity. In the working Examples of Takahashi and Nakamura et al. the transfer layers contain polyvinyl butyral binders which would inherently have the water contact angles as required by instant claims 40 and 41. Also, in Example 1 of Takahashi and Examples 1 and 2 of Nakamura et al. the light to heat conversion layers contain the same infrared absorbing dyes as used in applicants' working Examples, have a thickness of .3 microns and an absorption of 1 thereby providing

an optical density to layer thickness ratio greater than .57 as required by the instant claims. Also, the concentrations of absorbing material in the light to heat conversion layers of Takahashi and Nakamura et al. are the same as the concentrations disclosed in applicants' specification and the light to heat conversion layer thicknesses in Takahashi et al. and Nakamura et al. are preferably 105 to .3 microns. It would at least be obvious to one skilled in the art to use preferred concentrations of absorbing material and preferred thicknesses in light to heat conversion layers of Takahashi and Nakamura et al. to provide light to heat conversion layers that are as thin as possible with high enough concentrations of absorbing materials at the preferred disclosed ranges which would provide ratios of optical density to layer thickness of .57 or more. In regard to instant claim 37, it would at least be obvious to one skilled in the art to increase colorant concentrations in the transfer layer to increase transfer image density if Takahashi and Nakamura et al. do not inherently have the optical density to thickness ratios greater than 1.5 for the transfer layers as require din instant claim 37.

3. The prior art submitted by applicants has been considered.

4. Claims 7-16 are objected to as depending on a rejected claim but would be allowable if written in proper independent

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form. The prior art does not disclose four transfer elements with light to heat conversion layers of different optical densities but the same optical density to thickness ratios as required by instant claim 7.

5. Any inquiry concerning this communication should be directed to Mr. Schilling at telephone number (703) 308-4403.

RLSchilling:cdc

November 25, 2002

RICHARD L. SCHILLING
PRIMARY EXAMINER
GROUP 4400-1752

